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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/813,168	03/31/2004	Michael M. Albert	1857.2390000/MVM/CMB	4453
26111	7590	12/29/2005	EXAMINER	
STERNE, KESSLER, GOLDSTEIN & FOX PLLC 1100 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			CONSILVIO, MARK J	
			ART UNIT	PAPER NUMBER
			2872	

DATE MAILED: 12/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/813,168

Applicant(s)

ALBERT ET AL.

Examiner

Mark Consilvio

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 12 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 18-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 18-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/05 and 12/05.

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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## **DETAILED ACTION**

### *Status of Claims*

Claims 1-27 were previously rejected. Claims 1-17, 23, 24, and 27 have been cancelled. Claims 28-32 are newly added. Claims 18-22, 25, 26, and 28-32 are currently pending.

### *Information Disclosure Statement*

The information disclosure statements (IDS) submitted on 10/12/2005 and 12/19/2005 are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statements are being considered by the examiner.

### *Response to Arguments*

Applicant's arguments with respect to claims 18-32 have been considered but are moot in view of the new ground(s) of rejection.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 18-23, 26, and 28-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shuster (US Patent Application Publication No. 2002/0176166) in view of Hansen et al.

(US Patent Application Publication No. 2002/0167727) and in further view of one of the following: Nikolov et al. (US Patent Application Publication No. 2003/0223670), Lines et al. (US Patent Application Publication No. 2003/0227678), Leidig et al. (US Patent Application Publication No. 2004/0008310), or Wegmann et al. (US Patent Application Publication No. 2005/0146789).

With respect to claims 18 and 26, Schuster discloses an lithography apparatus comprising: (a) a source (51) producing a light beam having at least one wavelength within the UV spectrum; (b) a mask (57); (b) a substrate (63) transparent to light in the UV spectrum and disposed in a path of the light beam; and (d) an array of polarizing elements composing the substrate; wherein the array of elements are arranged in a pattern around the optical axis of the polarizer and divided into groups of elements to polarize incident UV light and output a tangentially polarized light, with respect to the cylindrical symmetry of the polarizer, toward the mask. Schuster does not expressly disclose an array of wire elements on the substrate; wherein the array of elements are radially arranged in a circular pattern around the optical axis of the polarizer and divided into groups of parallel elements to polarize incident UV light and output a tangentially polarized light, with respect to the cylindrical symmetry of the polarizer, toward the mask. However, Hansen teaches that birefringent crystal prism polarizers like that of Schuster are expensive and have a number of undesirable qualities for many exacting optical systems. Also, Hansen teaches that wire grid polarizers can cure many of these deficiencies by providing polarizing system that is thinner and causes less attenuation, that is less expensive, that has broader angular acceptance, and that is more efficient. Further, Hansen discloses that a plurality of wire elements may be arranged to produce the desired polarization orientation and therefore

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provides the additional advantage of being integrated into a single element that can utilize unpolarized light. Though Hansen does not teach that wire grid polarizers are known to be use in conjunction with ultraviolet light, several wire grid polarizers were known at the time of the invention. For example, see Nikolov et al. (US Patent Application Publication No. 2003/0223670), Lines et al. (US Patent Application Publication No. 2003/0227678), Leidig et al. (US Patent Application Publication No. 2004/0008310), or Wegmann et al. (US Patent Application Publication No. 2005/0146789). Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the teachings of Schuster and Hansen to replace the birefringent array and polarizer of Schuster with a UV wire grid polarizer in an appropriate arrangement to provide tangentially or radially polarized light to obtain the benefits of a wire grid polarizer.

With respect to claims 19-21 and 28-30, the combination as set forth supra does not expressly disclose the pitch, period, or thickness of the elements. However, it is well known in the art that only certain parameters pertaining to the wire grid polarizer will effectively polarize ultraviolet light. For example, one of ordinary skill would understand that a pitch of about one quarter of a wavelength of the UV light is desirable so that higher orders of diffraction are not created by the wire grid polarizer. Likewise, a period of between about 45 nm and 95 nm and a thickness of between approximately 0.04 and 0.3  $\mu\text{m}$  would be required for system making use of ultraviolet light around 193nm. Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to provide the required features for use in the lithographic system as taught by Shuster.

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With respect to claim 22, Schuster discloses the birefringent array includes fused silica, calcium fluoride, sapphire, quartz, or magnesium fluoride (par. 22). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use such a material for the wire grid substrate since it is well known that these materials are transparent in the ultraviolet region of light.

With respect to claim 23, the combination as taught above discloses the UV light comprises at least two polarizations and wherein the elements generally reflect most incident light of a first polarization direction and transmit most of the light of a second polarization direction.

With respect to claim 31, Hansen discloses the elements include aluminum, silver or gold. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use such a material for the wire grid substrate since it is well known that these materials are effective polarizing elements, are readily available, and can be apply according to a variety of methods to produce such small elements.

With respect to claim 32, the combination discloses the incident UV light is substantially unpolarized since the light source of Schuster produces unpolarized light and no other polarizer would be desired.

### *Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

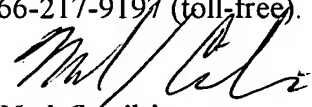
Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

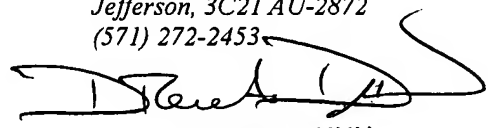
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Consilvio whose telephone number is (571) 272-2453. The examiner can normally be reached on Monday thru Friday, 8:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
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**SUPERVISORY PATENT EXAMINER**